Spending Outlook

IT Budgeting: Service Providers Losing Share Despite Stabilizing Prices

Despite a general sense of recovery in the broader economy and growth in overall IT budgets, large enterprises continued to keep a tight rein on their spending for telecom services. Among the executives we interviewed, carrier spending was expected, on average, to represent 15% of the IT budget in 2005, with more than 85% of respondents believing this share would stay flat or decline over the next 12-18 months.

Pricing was only part of the reason for the moderate expectations. Although most corporate telecom buyers take annual price declines as a given, we found they do not expect any greater rate of price decline than in the recent past. In fact, most have become less negative in their expectations of continued price decline, presumably anticipating the likely effects of industry consolidation.

More importantly, telecom spending trends are tightly linked to enterprises' demand not just in terms of volume, but also in terms of new services and features. With a renewed focus on the bottom line, companies appear to have raised the bar for the required return on new technology adoption. The result is a general reluctance to deploy new communications technologies — and when new services are adopted, it is usually premised on the expectation that overall telecom costs will be reduced as a result.

Expectations for Overall IT Spending Are Optimistic...

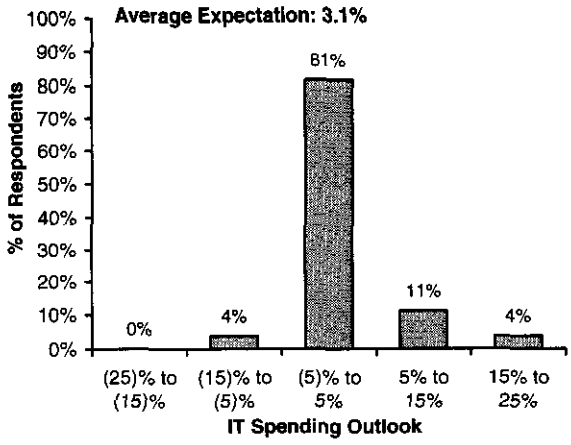
According to the March 2005 survey of U.S. CIOs conducted by Bernstein's IT Hardware and Technology Strategy teams, IT spending is projected to increase 3.0% in 2005. While this is down from an earlier expectation of 4.3%, taken in a similar survey conducted in November 2004, the outlook for 2005 still represents a higher degree of optimism than has been expressed by this group since 2003. Furthermore, these surveys have found that CIOs consistently underestimate IT spending growth by 400-500 bp.

Our conversations with *telecom buyers* echo the modest expectations of the CIOs, with one-half of the 30 respondents in our study expecting an increase in their organization's overall IT budgets in the coming 12 months, and the other half expecting a flat budget. (Notably, none of our respondents expected a decrease in overall IT spending.) The average expectation is a 4.8% increase, well within the 400-500 bp error range of the 3.0% average CIO expectation. Including only those respondents that expected IT spending to rise in the coming year, the average expectation is a 9.2% increase. By comparison, in our 2003 survey, we found that telecom buyers, on average, expected a 3.1% increase in their companies' IT budgets for 2004. Thus, our survey respondents are somewhat more optimistic now than they were one to two years ago (see Exhibits 28 and 29).

...But Carrier Spending Within the IT Budget Is Less Rosy

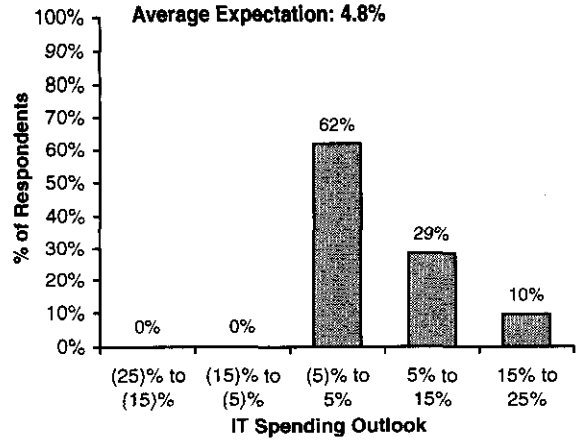
The optimism expressed about the overall IT budget, modest though it may be, does not appear to carry over to expectations about telecom spending. Although one-half of our respondents expected overall IT spending to increase, less than 15% expected an increase in outlays for communications service providers. One respondent was quick to qualify that although telecom spending was expected to increase, it would be at a slower rate than IT spending overall — hence share loss within the budget for the carriers.

Exhibit 28 Projected IT Budget Growth: 2004



Source: Bernstein Enterprise Telecom Decision-Maker Study II.

Exhibit 29 Projected IT Budget Growth: Next 12 Months

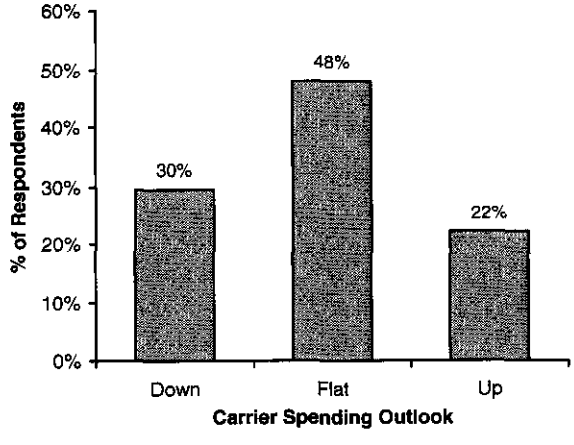


Source: Bernstein Enterprise Telecom Decision-Maker Study III.

In comparison, our 2003 survey respondents were more balanced in their expectations on carrier spending projections for the following 12 months: Half of them believed the trend would be flat, and the other half was fairly evenly split between expecting an increase and expecting a decrease in carrier spending for the year. In fact, compared to our most recent survey, the percentage of respondents expecting an increase in carrier spending was more than 50% higher in 2003 (see Exhibits 30 and 31).

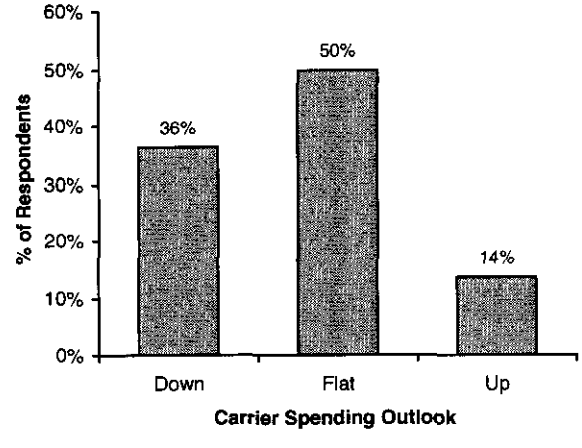
The inference again is that carrier spending as a fraction of overall IT spending continues to shrink. Consequently, despite expectations of *overall* IT spending having become more *optimistic* in recent years, corporate telecom buyers' expectations of *carrier* spending have become decidedly more *pessimistic*.

Exhibit 30 Projected Carrier Spending: 2004



Source: Bernstein Enterprise Telecom Decision-Maker Study II.

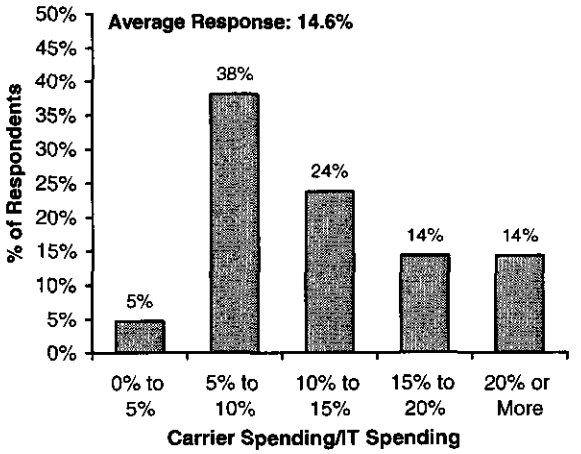
Exhibit 31 Projected Carrier Spending: Next 12 Months



Source: Bernstein Enterprise Telecom Decision-Maker Study III.

Our respondents report that carrier spending currently represents an average of 15% of their companies' overall IT budgets, with a range of 5% to 30%. Exhibit 32 shows the distribution of responses in the most recent study. While not a completely comparable metric, our 2003 respondents reported that *communications services* (which may include carrier-provided services as well as other components) accounted for one-quarter of their companies' IT budgets, on average.

Exhibit 32 Carrier Spending as a Percentage of Overall IT Budget: Next 12 Months



Source: Bernstein Enterprise Telecom Decision-Maker Study III.

Drivers of Enterprise Telecom Spending

Communications Integral to Business Processes

Against a backdrop of less-than-inspiring expectations for telecom spending, discussed in the previous chapter, we nevertheless found several reasons to maintain some optimism, at least for parts of the enterprise market.

For most large corporations, the use of communications technologies is as critical as any other factor of production to the enterprises' competitiveness. Manufacturers rely on communications to streamline their supply chains, retailers leverage it to manage inventory, and financial institutions use it to facilitate split-second decision-making — just to name a few examples. Especially in today's information-driven economy, it is almost assured that corporations will only increase their reliance on communications. Thus, we see no reason to believe that fundamental demand for enterprise telecom services is at any risk.

Enterprises' telecom needs often span the broadest spectrum of available services — one of the reasons that this market segment is the most difficult for telecom providers to serve. In addition to traditional local and long-distance voice services, these customers require calling cards and conferencing (often including video conferencing) solutions. Nearly every data protocol ever invented continues to be in use somewhere, from X.25 (first introduced in the 1970s) and VSAT (a form of satellite communications) to frame relay, ATM and, most recently, IP-based standards.

Carriers provide these services as well as the necessary customer-premise equipment, and frequently help to design, install and manage the network. Companies have not only learned to use these services, but in many cases have designed their business processes specifically to leverage communications technologies. As a result, they have come to expect the utmost reliability from their service providers.

Demand Drivers

Three specific factors support our belief that the enterprise market will be a key growth area for the telecom industry. First, it is clear from our interviews that the demand for telecom services is inextricably linked to business expansion. Those respondents that expected an increase in their companies' telecom spending were typically in aggressive-growth mode — either preparing to open new geographic locations, or to launch major new products or services. These organizations view telecom services as a critical element of their expansion plans and revenue-growth opportunities. In fact, telecom buyers generally believe overall business growth will do more to increase telecom demand than either lower pricing or larger IT budgets. Thus, to the extent that the overall economy improves and businesses grow, we should see escalating demand for enterprise telecom services.

Second, even among companies that do not expect to increase their overall telecom spending, clear shifts are anticipated in the components of spending — notably, from older technologies to newer ones. Two areas that are rapidly gaining adoption are VPNs, which are replacing legacy data protocols such as frame relay, and VoIP, which is replacing circuit-switched voice service. In many cases, such shifts are accompanied by changes in the

companies' choice of service provider. Therefore, there are opportunities for carriers to increase their share of customers' spending, if they are able to demonstrate capabilities in specific growth areas.

Third, and most important in terms of the impact on overall spending, a majority of companies interviewed expected to significantly increase their usage of wireless voice and data services. Wireless services currently account for only a small portion of the overall telecom budget — we estimate about 15% of enterprise spending in 2004 — leading most of our respondents to focus by default on their wireline telecom needs. When asked specifically about wireless, buyers' tones often change to optimism. Most respondents believed their organizations would develop business processes that increasingly leverage wireless applications — and not just for road warriors or telecommuters, but in the offices, manufacturing plants, warehouses and retail sites.

Business Expansion Drives Demand Growth: Cases in Point

At least one link between business expansion and telecom demand growth is intuitive: Business expansion typically means more employees, and more employees means more people with whom to communicate. But business expansion drives telecom demand in other ways, often causing a multiplicative effect.

Some examples from our surveys highlight how business expansion will drive demand. Most of these were cited by respondents who expected an increase in their companies' telecom spending.

- A major U.S. pharmaceutical company was preparing to enter "marketing mode" for a new drug about to emerge from its pipeline. Part of the effort would involve soliciting feedback from medical professionals and patients, employing traditional phone interviews as well as video conferencing and online techniques. Furthermore, the product would be cross-licensed with another pharmaceutical company, requiring voice and data networking between the two partners.
- A *Fortune* 100 financial services firm planned to acquire a smaller company and, with it, additional locations. The acquired sites' networks would have to be integrated into the corporate network, requiring higher-bandwidth connections. The infrastructure of the acquired company also needed to be upgraded to meet the acquiring firm's standards for security, redundancy and compliance.
- A major media conglomerate is experimenting with a new service that streams audio and video content to its distribution partners, potentially requiring prodigious amounts of bandwidth.

New Technologies Offer Opportunities in Specific Areas

Many of the buyers with whom we spoke, including those that expected flat or declining telecom spending, were actively evaluating new communications technologies. In some cases, these initiatives were being undertaken in the interest of cost savings — thus contributing to the companies' expectations of declining spending.

For non-incumbent carriers, these new technologies represent opportunities to enter into a new account. For the incumbents, they represent opportunities to mitigate potential losses — since if they don't offer the new services, their competitors most likely will.

The most common examples of new technologies currently being adopted are VoIP and IP-based IP-VPNs replacing legacy data services. Enterprise VoIP, a lesser-known cousin to the headline-grabbing consumer version, has in fact been available for a long time and is deployed more

widely than most investors realize — particularly at locations outside of the United States. Of the executives with whom we spoke, 40% said that their companies had already deployed VoIP to some extent, and 80% of those that hadn't deployed it were actively evaluating the technology. Most point to the realized or anticipated cost savings of up to 20% as the primary reason for migrating to VoIP.

IP-VPNs use software and hardware enhancements to emulate the features of other data protocols using Internet Protocol (IP). Like VoIP, the main driver of IP-VPNs is often cost savings — but another benefit is added flexibility (for instance, by allowing point-to-multipoint networking rather than the point-to-point links typical of legacy data networks).

Historically, the spread of IP-VPN has been hindered by concerns over its security and reliability, given IP's original raison d'être (and continued reputation) as a "best efforts" protocol. However, IP-VPN is steadily gaining acceptance, even among security-conscious users — like financial services firms — that are traditionally viewed as being most risk-averse when it comes to technology. In fact, the telecom purchasing director at one large financial services firm with whom we spoke is in the process of converting from frame relay to IP-VPN, with bandwidth *and reliability* cited as the key motivators.

Return on Investment Needs to Be Demonstrated

Whether talking about growth in overall demand or the shift in spending from one area to another, one thing was common among all the companies in our study: They demand a demonstrable return on investment for their telecom dollars. In many cases, this means an expectation of cost savings.

When the project involves an upfront capital outlay — as is the case for a migration from circuit-switched voice to VoIP, for example — the required cost savings can be substantial. In other cases — particularly where there is business expansion — the proposed telecom budget is rolled into the overall business plan for the expansion project. Some companies even perform an explicit return on investment analysis on the proposed telecom initiative.

One respondent at a retail company was particularly explicit on this point, saying he would support deployment of a new communications technology "only if the initiative can directly link and show an increase in sales." As an example, he proposed that the technology should enable the following scenario: "When a customer calls, they get the information they need in a minute instead of three minutes and they make that sale, whereas before they hang up the phone because they don't want to press the number or say the right word."

Another respondent, at a financial services firm, emphasized that business interests, not technology interests, are the driver of new telecom initiatives. "We've moved away from technology...being the driver behind these types of things," he told us. "We're now strictly on a business driver kind of model...Is there an increase in revenue? Is there cost savings in order to be able to justify this?"

Increasing Wireless Usage Expected

Enterprise wireless services were the unequivocal bright spot in our interviews. Nearly every company we spoke with expressed expectations of increasing usage — in wireless voice services, but especially in wireless data services. Accordingly, we see wireless services driving the bulk of growth in the enterprise telecom market over the next five years, more than offsetting the expected decline in wireline voice services.

However, while most of our respondents had visions of wireless applications revolutionizing their businesses, few could elucidate exactly what these applications were. Enterprises are generally looking to their vendors, including carriers, to lead with innovation in this area. Thus, as the importance of wireless services grows, so too will the profiles of carriers that can provide these services in an innovative and integrated way.

Increasing consumption of wireless services is already evident at many companies. A number of the firms with which we spoke, particularly financial services and other firms with mobile employees, are devotees of the BlackBerry handheld e-mail devices. Others have deployed more advanced wireless solutions. One large retail chain uses wireless point-of-sale handhelds in its stores to execute sales anywhere on the floor. Another company, a distributor, uses a wireless inventory tracking system in its warehouses and distribution operations.

For most companies today, spending on wireless services and equipment represents a significantly smaller piece of the IT budget than spending on wireline. Furthermore, wireless applications are still rudimentary — consisting mainly of voice and limited data access, such as e-mail — and isolated from wireline applications. As a result, wireless purchasing decisions, and the associated negotiations, are largely separate from the broader telecom procurement process. In fact, most corporations leave the wireless purchasing decision to regional locations, or even individual employees. For example, many corporate employees simply choose their own wireless provider, and then expense the bill to their companies.

The role of wireless services in the enterprise market will be discussed in a later chapter.

Perceptions on Pricing

Cost Cuts and Price Pressures Limit Spending Growth

Even though we believe enterprises will continue to increase their reliance on communications technologies, their dollars' worth of spending on telecom services will not necessarily rise in step with volumes consumed. When it comes to spending growth, we see two trends offsetting corporations' expanding appetite for telecom services: a general focus on cost-cutting and a history of steady price declines. In fact, among our respondents who reported declining telecom spending at their companies, none said they expected to decrease their use of telecom services.

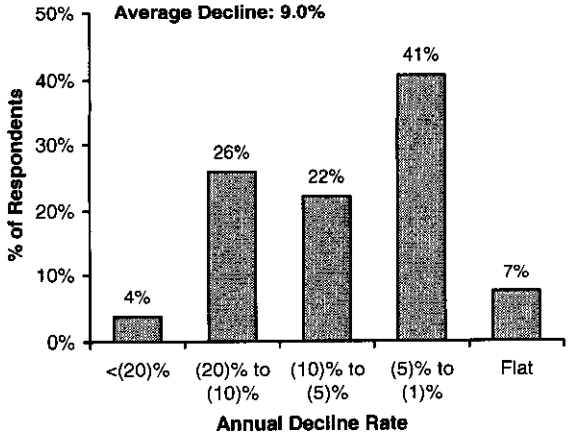
The pressure to cut costs is leading some companies to consolidate and reconfigure their corporate networks for increased efficiency. Doing so also allows them to consolidate vendors, giving them better negotiating power to ask for volume discounts. As one of our respondents said, "We're smarter about our contracts and the way we configure our networks, [with] significant downsizing of the budget as a result." Cost-cutting interests are also driving much of the technology migration, whereby companies switch their voice networks to VoIP or their data networks to IP-VPN, with the expectation that overall costs will be reduced or capabilities significantly increased at the same cost.

Adding to this, companies are also taking advantage of unit price declines in both voice and data services. The rate of decline in voice pricing is relatively modest, with most of our respondents seeing 5% or smaller annual declines, and a handful seeing flat pricing. The consensus was that voice pricing was already close to having reached the floor. As one respondent put it, voice was "almost a give-away now."

Data pricing is generally seen to decline more aggressively, but even there the respondents' experiences were more modest than we would have expected given imputable pricing trends from carrier financial reports. As Exhibit 33 shows, just under half of our participants believed data pricing was declining less than 5% annually, and only 30% of respondents were seeing declines above 10%. The average response was a 9% annual decline. In legacy data services, such as X.25 networking, prices are reportedly increasing at 10-15% annual rates as the carriers seek to force migration off old network platforms slated for retirement.

Interestingly, many respondents in our study believe they will see price declines start to taper off in the next year, presumably as an effect of the consummation of major mergers (namely, the pending SBC-AT&T and Verizon-MCI mergers). When asked to what degree they expect prices to decline when they next negotiate their telecom contracts, 5% and 10% were the most common answers.

Exhibit 33 Perceived Annual Rate of Decline in Data Pricing



Source: Bernstein Enterprise Telecom Decision-Maker Study III.

Key Decision Criteria for Enterprise Purchasing

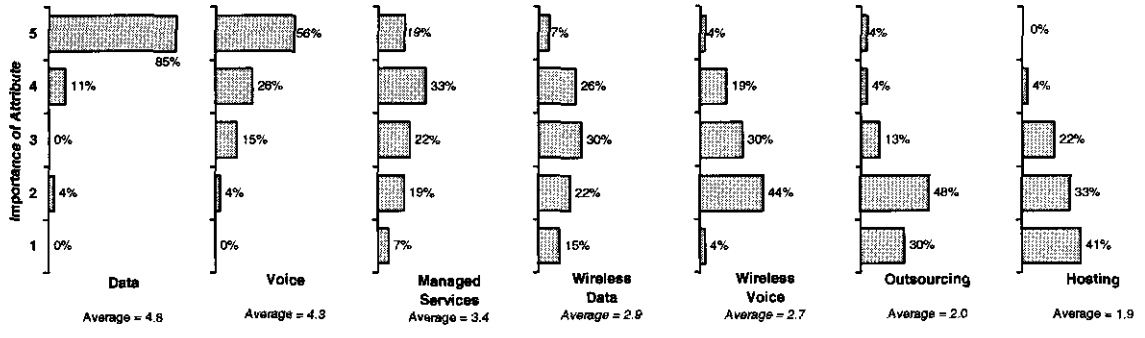
Importance of Carrier Services: Wireline Data and Voice Most Critical

In earlier chapters, we put forth two simple facts about the enterprise market. One is that the telecom needs of enterprises are varied and complex — in many cases requiring custom solutions, including not only voice and data connectivity, but also value-added services such as Web-hosting, network management and security. The second observation is that communications technologies, including carrier-provided telecom services, are critically important to business processes at large enterprises.

In light of these two facts, we assessed the relative importance of seven broad classes of telecom services. For each service class, we asked our study respondents to rate its importance on a scale ranging from 1 (representing no importance) to 5 (representing highest importance). Each service was rated independently; in other words, there was no limit to how many services a respondent could assign a particular score. For example, one respondent could choose to give all seven services a score of 5, while another may not give a 5 to any service at all.

Results are summarized in Exhibit 34. The bars denote the percentage of respondents that assigned a particular score to a particular service. For example, the left-most set of bars shows that 85% of respondents rated data services a 5 (for highest importance), 11% gave this service a rating of 4, and 4% gave a 2. None of the respondents chose to assign a score of 3 or 1 to data services. Note that the service categories have been ordered, with the highest-scoring services on the left and lowest-scoring ones on the right.

Exhibit 34 Importance of Carrier Services: Distribution of Survey Responses



Source: Bernstein Enterprise Telecom Decision-Maker Study III.

Not surprisingly, our respondents consider data services to be the most critical service offered, followed by voice services. Data and voice ratings also exhibited the smallest variations (as measured by the standard deviation of responses), suggesting a high degree of consensus among our respondents about these services.

The average score of managed services was about one standard deviation below that for voice, and exhibited a larger degree of variation in responses. Wireless services then followed, with data somewhat surprisingly

outranking voice in importance, though average scores for the two were rather close. Outsourcing and hosting were generally found to be less important, with only 8% of respondents giving outsourcing a score of 4 or 5, and 4% doing so for hosting.

In interpreting these data, it is important to consider the factors that are likely to affect respondents' ratings of these services. We believe there are at least three influences. First, as intended, respondents' ratings reflect their assessment of how important each service is to their companies' business processes.

Second, through our extended discussions with respondents, we found that ratings were affected by perceptions of the degree of variation in carriers' ability to provide each service. Respondents tended to ascribe higher importance to services for which they perceived there was greater variation in carriers' abilities. For example, most respondents felt there was far less difference in voice quality than in data quality from one carrier to another — and partly for this reason, believed data services deserved a higher importance rating. The implication is not necessarily that data services is in fact more *critical* to the company, but that it was more important as a decision criterion when *evaluating* carriers' capabilities.

Third, a low rating for a particular service can indicate either low perceived importance or simply that the respondent does not use that service at all. For some of the value-added services, such as managed services and outsourcing, not needing the service was clearly the case with many respondents.

Exhibit 35 provides some qualitative comments from our interviews.

Exhibit 35 Qualitative Survey Findings: Carrier Services

Service	Comments and Findings
Data Services	• Little perceived difference in range of products offered by carriers • Service, support and geographic reach are main differentiators • Also look for pricing flexibility and ability to balance utilization across the WAN
Voice Services	• Mature commodity product; little room for establishing a competitive differentiation • Price is main differentiator; but reliability and service also important • Other possible differentiators: reporting features and call center automation
Managed Services	• Many companies choose to manage their networks internally for better control • Larger carriers believed to have better tools, more experience • Billing flexibility and online managed services "portals" are potential differentiators
Wireless Data	• Promising service, but not currently relevant due to lack of applications • Concern — especially among financial companies — about network security • Speed and applications considered to be primary differentiators
Wireless Voice	• Few companies have consolidated their corporate wireless spending • Considered an enabler, not a business advantage • Network coverage and reliability are most critical
Outsourcing	• Few companies do it now, but many periodically investigate the opportunity • Trust is paramount; companies are reluctant to give up control of their networks
Hosting	• Few companies use their telecom carriers for hosting service • Most believed specialty providers offered better quality, reliability and price

Source: Bernstein Enterprise Telecom Decision-Maker Study III.

Enterprise Carriers Must Excel in Data and Voice; Other Services Provide Differentiation

Regardless of the exact reasons behind respondents' answers, the results from our study provide a good indication of what carriers should emphasize when serving the enterprise market. We draw three conclusions. First, enterprise carriers need to provide the highest levels of quality in data and voice services quality. Competency in these basic services represents the minimum standard for entry into this market.

Second, managed services as well as wireless data and voice services are prime opportunities for enterprise carriers to differentiate. Many respondents who ascribed low importance to managed services were those who did not use such services, primarily because they did not feel carriers could provide — or at least articulate — a compelling value proposition. The typical thinking goes: An incumbent carrier does not offer compelling managed services; therefore, we do not use it; therefore, it is not important to us. Following this logic, we believe more companies would use managed services — and judge managed services to be increasingly important — if their carriers could present a compelling value proposition.

As for wireless data and voice services, most enterprises are not currently large direct purchasers of these services. However, most of the companies we spoke with indicated that they expect to increase their direct purchases of these services in the future, especially as enterprise-level wireless data applications are developed and business processes become tailored to take advantage of wireless capabilities.

As a result, we believe the importance of wireless data and voice services will rapidly elevate to the forefront of important capabilities. Carriers that are able to competently provide these services — and integrate them with existing wireline services — should be looked upon increasingly favorably in the enterprise market. Remember, one reason why so little wireline-wireless integration has occurred to date is that only Sprint, among the "Big Three" enterprise carriers, had a captive wireless carrier for the past several years.

Our third conclusion regarding individual services is that outsourcing and hosting are largely niche opportunities. Enterprise carriers without these capabilities stand to lose very little business. Not all companies utilize these services — especially outsourcing, as that competes directly with managed services, which many of our respondents do use. Furthermore, companies that use outsourcing and hosting often turn to noncarrier providers, such as IBM, for these services. A common perception is that the large telecom carriers fell behind in these areas long ago. The result is that outsourcing and hosting are widely perceived to be separate from traditional telecom services, and therefore do not factor significantly into a company's choice of primary (and even secondary) telecom carrier.

Sidebar: What Are Managed Services, Outsourcing and Hosting?

For those less familiar with enterprise telecom services, we thought it would be useful to provide a brief explanation of managed services, outsourcing and hosting — before moving on to a discussion of carrier attributes. (The other services, wireline/wireless data and voice, are self-explanatory.)

Companies have two broad options for managing their communications networks — they can either manage it internally with their own staff, or allow a different party to manage it. Managing a network has many facets, including (but not limited to) monitoring, repairing, securing and administering.

When companies choose to allow a third party to manage their networks, there are two ways to do it. One way is a managed-services approach, where the third party — usually the carrier — takes over mainly the transport and equipment aspects of the network, and manages these elements remotely (with site visits as necessary). The company still maintains its own staff for local network support.

The alternative is an outsourcing approach, where the third party — which can be the carrier or, increasingly common, a company such as IBM — takes over all aspects of network management. Typically, this involves a

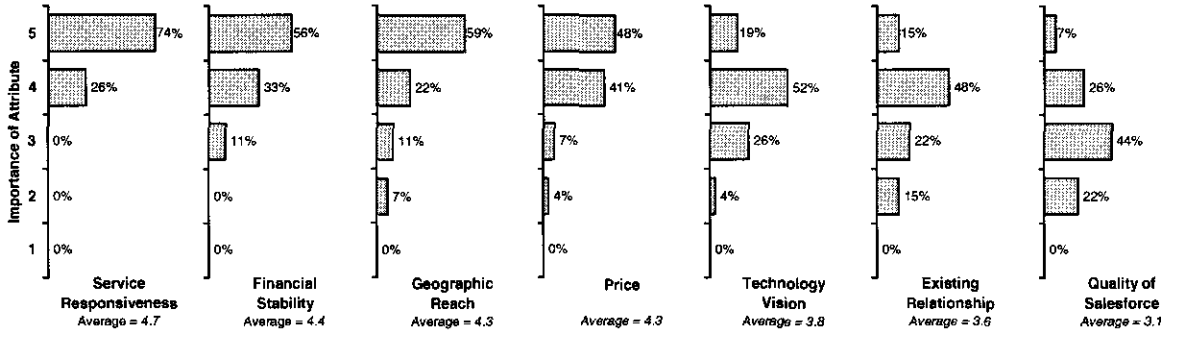
transfer of network assets and employees. As a result, the third party owns the assets and employs the staff, and the company purchases the pure service only, without having to worry about network management at all.

Hosting typically refers to Web-hosting and, in some cases, application-hosting. While these services are important to companies — especially given the rising significance of electronic commerce — they are often provided by noncarrier companies. Because our study focused on telecom *carrier* services, many respondents attributed low importance to hosting, because they did not expect their carrier to provide this service (extensive carrier ownership of Web-hosting centers notwithstanding).

Importance of Carrier Attributes: Carriers Evaluated on a Balanced Scorecard

With an understanding established of the relative importance of different services, we turn to an evaluation of carrier *attributes* as selection criteria for enterprise telecom buyers. Utilizing the same scale of 1 to 5 as before, we asked respondents to rate the importance of seven attributes: service responsiveness, financial stability, geographic reach, price, technology vision, existing relationship, quality of sales force. Results are shown in Exhibit 36.

Exhibit 36 Importance of Overall Carrier Attributes: Distribution of Survey Responses



Source: Bernstein Enterprise Telecom Decision-Maker Study III.

Compared to the results for service importance discussed above, our respondents' ratings for carrier attributes showed less variation for each attribute, with a maximum standard deviation of less than 1.0 for any category. *This suggests that enterprise customers have formed a consensus* about how to view providers' attributes.

Furthermore, the difference in average ratings spanning the attributes was much narrower. The lowest-rated had an average score of 3.1 and the highest-rated earned 4.7 — for a gap of 1.6 in carrier attributes, compared to 2.9 for services. The inference is that all of these attributes are at least somewhat important to most companies. Notably, none of the attributes was judged to be of no importance (rating of 1) by any respondent.

Nevertheless, looking at Exhibit 36, it is clear that service responsiveness, financial stability, geographic reach and price are the most important attributes among the decision criteria, as 5 was by far the most common rating for each of these. The remaining three — technology vision, existing relationship and quality of salesforce — are of secondary, though still relatively high, importance in the purchasing decision. One way to think of this is in terms of a "balanced scorecard": Enterprise customers look for carriers to demonstrate capability in all these attributes, and will likely choose the carrier that has the best balance across the board.

As was the case with the survey results regarding services, we believe the results regarding carrier attributes are influenced by several factors. First, because companies' telecom needs vary, it should be recognized that the judged "importance" of an attribute is not necessarily related to the company's expectations for how that attribute is met. A multinational corporation, for example, would likely expect its carrier to reach a far greater number of worldwide locations than would a smaller regional company; yet, both companies may deem geographic reach to be very important to them. In this case, a carrier wishing to serve the smaller company should not assume that it needs to demonstrate international reach, just because the company rated geographic reach a 5 on our scale. What is important is that the carrier can serve the *specific* needs of the particular customer. Similarly, different companies may have different requirements when it comes to price or service responsiveness that are independent of how they judge the importance of these attributes.

Second, a company's opinion of the importance of each attribute is at least partly influenced by its past experience with specific carriers. For example, we found that many companies that had used or currently use service provided by MCI tended to judge financial stability to be very important — reflecting their uneasiness over MCI's bankruptcy three years ago. Some companies that were not customers of MCI stated that they were more concerned about their carriers' financial stability now that they have seen what happened to MCI. The overall high importance of existing relationships (with a rating of 4 being the most common response) also underscores the role that past experience plays in companies' telecom purchasing decisions.

Exhibit 37 gives some qualitative findings from our survey regarding carrier services.

Exhibit 37 Qualitative Survey Findings: Carrier Attributes

Attribute	Comments and Findings
Service Responsiveness	• Carriers are not using this as competitive differentiator, but they should • Service levels can fluctuate across different services from the same carrier • Flexibility is a key differentiator — service when and how the customer wants it
Financial Stability	• More "conservative" financial and pharmaceuticals companies are the most concerned • Difficult and expensive to change telecom carriers, especially in a hurry • Stability believed to translate into better reliability and technical innovation
Geographic Reach	• Ability to reach all locations allows lower complexity and greater integration • However, many companies do not want complete consolidation with single carrier • Large carriers like AT&T, Sprint and MCI seen to have significant advantage
Price	• Not a competitive differentiator, all carriers seen as price-competitive • General belief that price is always negotiable from any carrier • Price leadership can be deceiving; must be balanced with service level
Technology Vision	• Carriers believed to have much the same vision, though use different language • As a result, some companies consider technology vision completely irrelevant • Others see significance in long-term vision, particularly around network management
Existing Relationship	• Familiarity with carrier is valuable, but not impossible to overcome • Competitive carrier must give strong reason — usually financial — for switching • Changing carriers is technically difficult and expensive
Quality of Salesforce	• Expect consistency across the account team • Salespeople should understand clients' businesses and specific needs • The technical proficiency of salespeople is sometimes found to be lacking

Source: Bernstein Enterprise Telecom Decision-Maker Study III.

Focus and Targeting Are Key to Meeting Enterprise Telecom Needs

Despite the relative homogeneity in our respondents' rankings of the importance of these seven carrier attributes, one should not believe there is a "one size fits all" mentality for the enterprise market. That is, a carrier that excels in all seven attributes for one customer may not necessarily excel for another customer.

What is more important is that the carrier focuses on the *specific* needs of its customers in these seven areas. To extend the multinational-versus-regional customer example used above: for a large multinational corporation a carrier would emphasize its international reach, but for a regional firm the ability to reach local offices would be emphasized. As another example, a carrier serving financial services companies needs to provide a balance between high service responsiveness and reasonable (but not necessarily the lowest) price. This goes back to our notion that enterprise customers evaluate carriers on a balanced-scorecard basis.

Because enterprise telecom needs vary across companies, there are also opportunities for carriers to target specific customers. In some cases, this means a niche strategy whereby the carrier goes after a specific customer segment — financial services, for example.

Frequently, however, it just means the carrier allocates its limited resources in such a way as to increase the chances of winning business from key customers. In our study, we saw clear evidence of this with regard to salesforce deployment. When our respondents talked about their experiences with carriers' salesforces, we found that different companies had very different experiences with the same carrier's salesforce. We believe this is due to the carriers' intentional allocation of their A, B and C sales teams to accounts depending on the perceived values of the accounts, reserving the "A-team" for the most important clients.

Different carriers, of course, find reasons to target different customers. Thus, large companies tended to perceive the salesforces of large carriers like AT&T to be most competent; but at smaller firms, the sales teams of the RBOCs — by most accounts secondary players in the enterprise market — were sometimes praised as being better than the sales teams of their larger competitors. Presumably, the RBOCs sent their A-teams to those accounts where they felt there was a reasonable chance of winning business away from the incumbents.

Wireless Services in the Enterprise Market

Many Enterprises Not Ready to Consolidate Wireless Purchases

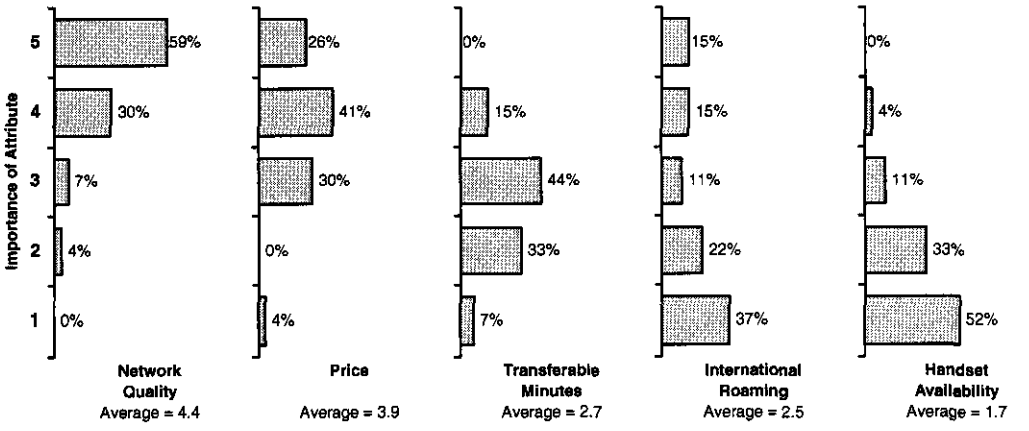
Even though we think the mergers of SBC with AT&T, Verizon with MCI, and Sprint with Nextel will cause the major wireless carriers — Verizon Wireless, Cingular Wireless and Sprint/Nextel — to push for joint corporate purchasing of wireline and wireless services, there is little evidence that enterprises are ready to concentrate such purchases. Instead, most participants in our study believe that wireline and wireless services have different needs and requirements, and have no issue buying these services separately.

With only limited interoperability and integration currently available across enterprises' platforms, buyers are more focused on securing the best services bundle and price to meet the needs of each platform separately, than on simplifying sourcing relationships. Thus, while wireless is rapidly growing in importance in the context of overall enterprise communications services budgets, the outlay today does not provide enough leverage in pricing negotiations with carriers to warrant the loss of decision-making control that comes with bundling wireline and wireless purchases.

Importance of Wireless Services Attributes — Network Quality Above All Else

To understand enterprise telecom buyers' key decision criteria for wireless services, we asked respondents to rank, from lowest to highest, the importance of five wireless carrier attributes. Exhibit 38 summarizes the results. In the exhibit, a rank of 5 indicates the respondent assigned the highest importance to that attribute, and the bars show the percentage of respondents that assigned a particular rank to a particular attribute.

Exhibit 38 Importance of Wireless Carrier Attributes: Distribution of Survey Responses



Source: Bernstein Enterprise Telecom Decision-Maker Study III.

As the exhibit shows, network quality was judged to be the attribute of highest importance by 59% of respondents. More than one-half of the remainder picked price as most important. Handset availability — a key differentiator in the consumer wireless market — was ranked very low by enterprise buyers relative to the other four decision criteria probed.

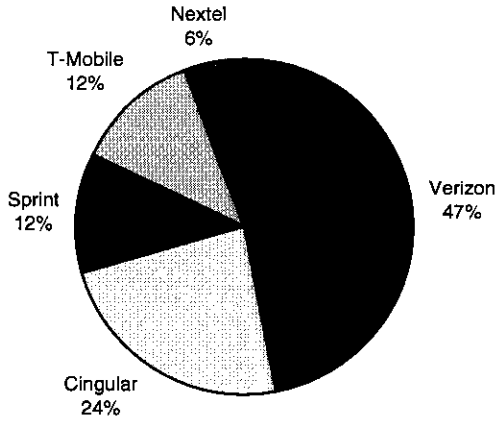
Many respondents were undecided about two areas: international roaming and transferable minutes between wireline and wireless. In international roaming, the dispersion was particularly large, reflecting the absolute nature of the need (either the user travels internationally or he/she doesn't). As for transferable minutes, respondents generally saw value in such a feature, but interest is muted because no carriers are offering such a service today.

Coverage Inconsistencies Cause Geographically Fragmented Buying

One fact we found startling from this year's study was that wireless purchasing seemed to escape the generally disciplined approach in buying telecom services for enterprises. Nearly one-half of the participants indicated that they do not consolidate wireless purchasing at the headquarters level, and almost no respondents consolidate wireless buying with wireline purchases. Because of the perception of significant regional differences in network quality and coverage, enterprise buyers allow the wireless purchasing decision to occur at the local or regional level — and many times at the individual employee level — despite the obvious negative impact on IT platform management and pricing.

Among the 56% of enterprises in our survey that consolidate wireless purchasing decisions at the corporate level, Verizon was found to have the largest share. Specifically, it was named nearly one-half the time by these respondents as the primary wireless carrier, while Cingular was the second-most popular, with 24% share (see Exhibit 39).

Exhibit 39 Named Primary Wireless Carrier



Source: Bernstein Enterprise Telecom Decision-Maker Study III.

Sprint and T-Mobile received about 12% share each from our survey respondents, while Nextel — another carrier generally perceived to be strong in the business market — garnered only 6% share. Results for Nextel were probably skewed by our survey's bias toward large enterprises; had we included small and medium-size business and government organizations,

which are Nextel's traditional strongholds, we believe the company would have shown significantly greater share.

Extrapolation of Enterprise Market Shares: Verizon Wireless and Cingular in the Lead

Even putting aside this issue specific to Nextel, we believe a simple extrapolation of our results to wireless carriers' overall shares among the enterprises would be somewhat inaccurate because of two reasons. First, our sample size is not only biased, but is also too small to be statistically significant — especially because nearly one-half of our 27 respondents did not provide data about wireless purchasing decisions (they did not have "primary" wireless carriers).

Second, our respondents' answers are likely influenced by factors that may cause them to misrepresent their actual carrier alignments. Based on our survey, we found that many companies not only disaggregate their wireless telecom purchases from wireline purchases, but they also disaggregate wireless voice purchases from wireless data. In fact, we believe it is far more likely for a company to consolidate wireless data purchases than wireless voice — because wireless data applications often require some degree of integration with the corporate IT system. (BlackBerry e-mail devices, for example, need to work with corporate e-mail servers.)

With these factors as a backdrop, suppose that a company uses both wireless voice and data services, but consolidates only the data purchases, while leaving voice purchase decisions to regional managers. In this case, in response to our question about which company is the primary wireless carrier, the respondent would name only his/her wireless data carrier — even if spending on wireless voice was much greater.

As another example, consider a company that consolidates purchases of both wireless voice and data services, but purchases them from different carriers. In response to our question, we believe there is a high likelihood that our respondent — who is a senior official responsible for the purchase decision — might only think of the wireless data carrier, because the integration of wireless data services is far more critical than that of wireless voice. In this case, as in the previous example, the effect would be a misrepresentation in our results, likely with a bias toward carriers strong in wireless data services.

Despite the survey's shortcomings, we believe our results point to Verizon Wireless and Cingular as the current leaders in the enterprise market, while the combination of Sprint and Nextel is not far behind. That Verizon Wireless' share is comparable to — or perhaps larger than — Cingular's is an important finding, given the fact that Cingular now includes the former AT&T Wireless, which was widely regarded as having a large share of the corporate wireless market.

We believe two positives aided Verizon Wireless in gaining an increasing share of the enterprise market. First, it likely benefited from AT&T Wireless' unquantifiable enterprise share losses in 2003-04, as that carrier struggled with operational deficiencies ahead of its acquisition by Cingular. Second, Verizon's lead in 3G has helped significantly raise its profile in wireless data services.

Qualitatively, our respondents credited Verizon Wireless with offering the best of both wireless voice and data services to enterprises, with solid network coverage and a lead in deploying third-generation wireless broadband capabilities. Cingular, in contrast, was seen as playing a game of catch-up, with a significant awareness among our respondents of the back-office stumbles the company has faced following the AT&T Wireless acquisition and the challenges it has in integrating numerous IT platforms (in-

cluding one respondent's unaided mention of the company's 13 different billing systems).

Increasing Relevance of Wireless Likely to Increase Frequency of Corporate Purchasing

Although little more than one-half of our respondents currently consolidate their corporate wireless purchases, most of them believe wireless will become an increasingly important component of their telecom needs over the next three years, especially as wireless data applications that enhance productivity are developed. As this trend plays out over the next couple of years, the dominance of Verizon Wireless and Cingular should prove to be a key value driver — one sometimes underappreciated — in the Verizon-MCI and SBC-AT&T mergers.

Financial services firms have been some of the most enthusiastic adopters of mobile corporate e-mail delivery, but they are also the most cautious about the more groundbreaking adoption of wireless data services. They are concerned about wireless data security, and are uncertain about how and when security issues will be resolved. Along these lines, carriers' ability to improve not only the integration of wireless applications with existing wireline ones, but also the integration of wireless security into those protocols already proven and in place serving the enterprise's wireline networks, will determine how quickly wireless data services gain traction.

Even though most companies anticipate leveraging wireless data applications to enhance their productivity, few of our respondents could articulate exactly what applications they envision using. Enterprises are largely looking to their vendors — including carriers and software developers — to lead with innovation in this area. Enterprise telecom buyers in particular, and IT departments in general, are closely watching the rollout of 3G wireless networks and associated development of 3G applications and devices.

Despite the impediments to broader adoption, we see enterprise purchases of wireless services — especially wireless data — accounting for the bulk of the enterprise telecom market's growth over the next five years, more than offsetting the expected decline in wireline voice revenues. In fact, we believe that the enterprise market will be the largest driver of wireless data revenues over the coming half decade, despite the fact that our estimates have consumer 3G wireless data users outnumbering enterprise customers by potentially 10-20 times.

Other Enterprise Services: VoIP and IP-VPNs

Enterprises Are Cautious Adopters of New Services

Large enterprises not only consume large volumes of telecom services, they also tend to consume the most complex and diverse set of services. Arguably more investment in R&D has been devoted to the enterprise market than to any other customer segment in telecom, even the larger and more visible consumer segment. Enterprises today are served with a host of voice and data technologies that have been developed to meet their specific needs. Some of these — VoIP, for example — have only recently been introduced into the consumer and SMB markets, after years of routine use in the enterprise market. In addition to basic voice and data connectivity, enterprises also pay for value-added features, such as network management, security, and service-level guarantees.

Despite their apparent appetite for leading-edge technologies, many enterprises are cautious adopters of new telecom services. Because even a brief network outage can be potentially crippling to a company running mission-critical applications on its data or voice network, enterprise telecom buyers tend toward conservatism when it comes to unproven technologies. Even when the technology's reliability (in terms of minimizing outages) has been demonstrated or otherwise guaranteed by the carrier, concerns over security are often another significant barrier to adoption.

Return on investment is a central consideration in all cases. The added value of the new technology, or cost savings enabled by it, must be sufficiently high to overcome the initial cost of adoption, which often involves replacing existing equipment and migrating from existing systems.

In our recent study of enterprise telecom buyers, we gauged the level of interest and usage of several specific technologies, including enterprise VoIP, IP-VPNs and wireless data services. We found a surprising degree of consistency in the attitudes expressed by our respondents in these areas, which we believe exemplify an enterprise's overall telecom buying decision when adopting new technologies. Overall, our respondents were generally enthusiastic about these services, and expected to increase their use of them. However, the actual deployment of these services is far less than our respondents' enthusiasm would suggest is appropriate, as adoption tends to be deterred by the factors mentioned above.

Our study findings relative to enterprise VoIP and IP-VPN services, specifically, are summarized in the sections that follow. Our findings relative to wireless data services in the enterprise market are reviewed in an earlier chapter.

What Is Enterprise VoIP?

Like its better-known consumer-oriented cousin, enterprise VoIP uses the ubiquitous Internet Protocol (IP) to transport voice calls, in a way that is virtually transparent to the user. Unlike the consumer version, however, migrating from traditional voice service to enterprise VoIP is a much more complicated process. Whereas a consumer typically needs only install a plug-and-play network adapter, an enterprise's migration requires a host of new equipment (telephones, switches, routers, etc.). The upfront cost of the

equipment and the complexity of coordinating the migration itself have led to a more gradual adoption of enterprise VoIP than one might otherwise expect.

Broadly speaking, there are two versions of enterprise VoIP, distinguished by the role that the carrier plays. In a premises-based installation, the carrier provides traditional voice trunks or dedicated Internet access lines (depending on the customer's configuration); the enterprise is responsible for purchasing and managing its own IP-Public Branch Exchange (IP-PBX) and IP phones.

In a hosted PBX or IP Centrex solution, the carrier provides PBX functionality through the network, without requiring installation of physical equipment at the customer premises. Instead, the physical PBX hardware (or a software emulation of it) resides at the carrier's central office, but the customer's phones behave as if they were connected to a local PBX.

There are two main reasons for an enterprise to adopt VoIP: the enhanced feature set and potential cost savings. The inherent flexibility of IP enables IP-PBXs to provide features that would be impossible or difficult to implement with traditional PBXs — just as consumer VoIP services usually offer features not found in traditional circuit-switched voice services.

However, as enticing as the feature set is, our interviews suggest that it is rarely the primary motivator for enterprises to embrace VoIP. In most cases, the potential for cost savings was cited as the key reason. Only in cases of a greenfield build or a major expansion of the voice network might a company decide to go with VoIP purely for the added features.

Cost savings for enterprise VoIP are derived from two sources. The first is the potentially lower cost for the voice service itself, due to using IP for transport rather than a switched circuit. The second and often more significant source of savings is in the administration of the IP-PBX. Greater degrees of flexibility and automation allow the IP-PBX to more easily facilitate moves, adds and changes, which are large administrative costs for traditional PBXs.

Contrary to popular belief, the VoIP equipment itself is usually not a source of cost savings. In fact, most VoIP equipment today costs more than its circuit-switched counterpart. (This is likely to change, however, as VoIP deployment volumes and competition ramp up.)

What Is IP-VPN?

IP-VPNs can be thought of in a similar way as enterprise VoIP. Whereas VoIP uses IP to emulate traditional voice service, VPNs use IP to emulate other data protocols, such as frame relay or ATM.

Like VoIP, VPNs also offer feature and cost-savings benefits, both of which can be significant and are the reasons for our respondents' enthusiasm for IP-VPN functionality. As a side note, the interest in VPNs has been a driver behind many carriers' recent investments in MPLS technology, which facilitates the offering of certain VPN services.

There are two broad flavors of IP-VPN, known as "layer 2" and "layer 3" (referring to the OSI network model). A layer 2 VPN emulates another data protocol as closely as possible, without additional functionality. A layer 3 VPN emulates another protocol with the additional feature of "any-to-any" site connectivity — much like a local area network (LAN), where any computer may communicate with any other computer. Traditional enterprise data services like frame relay and ATM, in comparison, are "connection-oriented," meaning they allow one-to-one connectivity only. Deployment of IP-VPN technology has been a major enabler of remote access services for mobile and work-at-home employees.

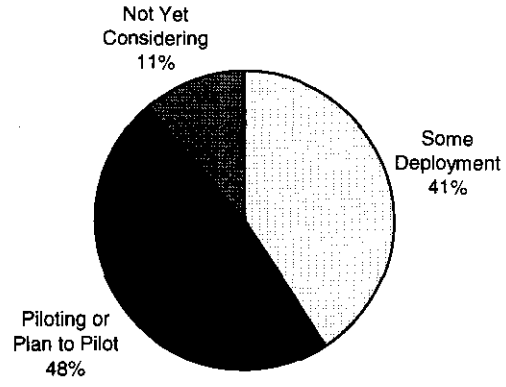
For both VoIP and IP-VPN, the primary drawbacks fall into two categories. First, there is uncertainty about the reliability of these services. Whereas traditional voice and data services use circuits that are dedicated and always on, the packet-switched IP is inherently a "best efforts" service. As such, it is difficult to guarantee service levels in terms of network uptime, latency, etc.

Second, there are concerns about the security of IP, which transports packets over shared infrastructure; packets may be lost or the network could be brought down by another careless (or malicious) user. The use of private IP networks, as opposed to the public Internet, helps to at least partially alleviate these concerns but does not completely eliminate them (particularly the threat of attack).

Status of Enterprise VoIP Deployment

Generally speaking, VoIP enjoys high levels of awareness and interest among enterprises. Of the 27 enterprise telecom buyers with whom we spoke, all were familiar with the technology, and only three said they had not yet begun to evaluate it closely. Of the other 24 companies, slightly more than half were actively piloting VoIP or had plans to do so in the near future, while the rest had already deployed VoIP in some of their corporate locations (see Exhibit 40).

Exhibit 40 VoIP Status at Surveyed Enterprises



Source: Bernstein Enterprise Telecom Decision-Maker Study III.

None, however, had deployed VoIP widely across the entire company. In fact, three-quarters of our respondents said large-scale adoption of VoIP is at least two to three years away, and only one respondent expected an enterprise-wide rollout within the next year. The majority of our respondents appeared to believe that eventual adoption of VoIP is inevitable, making the migration a question of when, not if.

Driving the interest in enterprise VoIP is the expectation of substantial cost savings. A secondary consideration is the added features. Most respondents found it difficult to quantify the exact amount of cost savings that would be enabled by VoIP, but expected it to be derived from both service and network management costs. In addition, there is an expected intangible benefit from the eventual convergence of all voice and data networks onto a common IP platform, further facilitating overall network management. VoIP equipment costs were generally viewed to be in line

with traditional voice equipment, though it was expected that costs would decline quickly with time.

Relative to the technology itself, most respondents believed enterprise VoIP delivers adequate quality and reliability, but expressed a slightly greater concern over security issues. Several financial services and pharmaceuticals firms, for example, were particularly sensitive to the possibility of having their voice network taken down by viruses or other types of network attacks. Even when the corporate IT department was completely convinced of VoIP's technology readiness, it faced the additional challenging of "socializing" the technology to the rest of the company.

Status of IP-VPN Deployment

Virtually all of the companies we surveyed are already using IP-VPN services to some extent, and expect to deploy the technology more widely in the future. However, the degree of usage of VPNs is currently far less than that of traditional data services like frame relay and ATM. In most cases, VPNs were used to address new data needs — for example, when new applications were brought on-line. We heard no specific examples where a VPN was used to fully replace an existing data service; presumably the risks involved in porting existing data applications to VPN are too great to justify doing so. Given our respondents' comments, we believe the migration to IP-VPN will be gradual, driven largely by organic business expansion and the natural upgrade cycle of data applications.

Unlike VoIP adoption, which appears to be motivated almost exclusively by cost-reduction efforts, enterprises are drawn to IP-VPN at least as much by the features as they are by the cost savings, based on our interviews. The flexibility of any-to-any connectivity enables more effective communications between multiple sites, allowing enterprises to implement real-time processes that coordinate the activities across different parts of the company.

Most respondents view IP-VPN technology as inferior to frame relay and ATM in terms of reliability and security, partly from experience and partly because of the instinctive association of any IP-based technology with the best-efforts, shared nature of the IP protocol. Because data applications are usually considered to be critical to business processes, concerns over the data network's reliability and security are amplified compared to similar concerns with voice service. Nevertheless, at least one financial firm we surveyed has endorsed IP-VPN, telling us that it intends to eventually retire its frame-relay networks and replace them entirely with IP-VPN.

Return on Investment Expected of Telecom Dollars

Enterprises approach telecom spending as they would any other business spending: They demand an adequate return on investment. Thus, the overall enthusiasm expressed toward enterprise VoIP and IP-VPNs is tempered by the need to demonstrate the business case for adopting these technologies. With the value of cost savings, added features and risks difficult to quantify, demonstrating the payback can often turn into a formidable barrier to adoption — but an equally large opportunity for the carriers.

In cases where an enterprise is considering migrating from an existing voice or data network to VoIP or IP-VPN, respectively, our respondents suggested a return on investment of 15-20% was necessary to justify the migration. Given the upfront cost of migration, including the replacement and/or upgrading of existing equipment, this threshold proves to be difficult to meet. For greenfield deployments (new locations or expansions), the proposed VoIP or IP-VPN deployment is rolled into the overall business plan for the project, making the threshold easier to reach.

The hurdle for migrating to VoIP or IP-VPN is raised further by the price declines in traditional voice and data services. For example, if migration to IP is expected to decrease service costs by 15%, but the equivalent circuit-switched service is expected to decline in price by 5% annually, then the net savings from migrating to IP is really only 10%. In the case of VoIP, this effect is exacerbated by the fact that traditional PBXs are also becoming increasingly automated, raising the hurdle for savings in administrative costs from going to VoIP.

Where Does This Leave the Carriers?

Enterprises' cautious adoption of new services such as VoIP, IP-VPN and wireless data may suggest that the enterprise market is stagnant and that carriers' positions in the market are assured once they have established themselves with traditional voice and data services. We see things differently.

In our surveys, our respondents indicated a high degree of interest in these new services, and a willingness to adopt them — as long as they meet expectations related to return on investment, reliability and security. Even though enterprises have high expectations, they have clearly signaled that carriers that are able to meet these expectations will have plenty of business to win. In essence, the new services represent windows of opportunity for significant share gains, and could put incumbent carriers on the defensive.

In our view, this has two effects. First, it potentially opens the enterprise market to newer entrants — like Qwest — that previously found it difficult to compete with the already deeply established incumbents in traditional voice and data services. This dynamic also opens the door for carriers with wireless data capabilities capable of converging their wireless and wireline offers.

Second, the emergence of new services will favor carriers with scale. The best IP network, in terms of superior network performance and low operating costs, is the largest and most advanced one. Building such a network, keeping it technologically up to date, and developing the applications that leverage the network require significant investments. Smaller carriers will find it difficult to offer services that meet the enterprise market's stringent demands.

Furthermore, even as new services are adopted, the old ones rarely die (X.25 technology, for example, continues to be used even though it is probably older than many readers of this report). Therefore, carriers that can provide both old and new services should have an advantage in the market. This also favors the largest carriers with the greatest scale, as they are likely to also have the greatest scope in services offered.

We believe enterprises' cautious attitude toward new services is consistent with the continued dominance of the existing incumbents AT&T, MCI and, to a lesser extent, Sprint, especially as these carriers will also have integrated wireless capabilities with closure of the current round of consolidating transactions.

Company Positioning: The Bells Make Inroads

Primary and Secondary Carriers Determined by Data and Voice Needs

Despite the complexity and diversity of a typical enterprise's telecom needs, basic data and voice connectivity are still regarded as the most critical services. Data and voice account for the bulk of the enterprise telecom budget. Other value-added services — such as managed services, outsourcing and Web-hosting — represent less than 20% of the typical enterprise's spending with carriers.

Value-added services are also typically considered to be more discretionary purchases, which in most cases can be separated from the purchasing of basic voice and data services. For example, many enterprises that use outsourcing and hosting services procure them from noncarrier vendors such as IBM. As such, their choice of telecom carrier is rarely influenced by carriers' capabilities in these areas (although a carrier could capture more of the customer's spending if it could provide a compelling value proposition in these services).

For the most part, enterprise buyers' choice of primary and secondary telecom carriers hinges on data and voice networking needs. To get a sense of where the carriers stand in terms of market share in the enterprise market, we asked our respondents to name their primary and secondary carriers for both data and voice. Respondents were allowed to name more than one primary or secondary carrier, if such was the case (to achieve redundancy, for example).

In fact, compared to similar studies we conducted in previous years, our latest survey found that a greater number of companies now have more than one primary carrier, often in addition to at least one secondary carrier. Of the 27 companies we talked to, 16 (or nearly 60%) named two primary carriers for data, and 13 (almost 50%) named two primary carriers for voice; one-half of these also named secondary carriers for these services. It seems that in the aftermath of several carriers' financial collapses and amid a heightened sense of the need for security, companies today are less inclined to rely entirely on a single carrier for all their networking needs.

Our respondents' answers also revealed a common tendency for enterprises to choose the same carrier(s) for their data and voice needs. Although the purchasing and provisioning of data and voice services could easily be separated, there are several reasons why buyers would want to consolidate these services: Volume discounts, integrated network management and simplified billing are some of the key incentives. In our survey, more than three-quarters of respondents named the same carrier as their primary voice and primary data carrier.

AT&T and MCI are by far the most popular carriers in cases where the same carrier is chosen to provide both data and voice services — together, they accounted for 85% of these cases (with AT&T modestly leading MCI). This is significantly greater than the share they command for data and voice services individually (as shown below). In other words, companies that choose not to use either AT&T or MCI as their primary carrier tend to have to buy data and voice services separately from different carriers — suggest-